

**As outcomes, Year 8 pupils should, for example:**

Use vocabulary from previous year and extend to: linear relationship... intercept, steepness, slope, gradient...

**Generate coordinate pairs and plot graphs of simple linear functions, using all four quadrants.** For example:

- $y = 2x - 3$   
(-3, -9), (-2, -7), (-1, -5), (0, -3), (1, -1), (2, 1), ...
- $y = 5 - 4x$   
(-2, 13), (-1, 9), (0, 5), (1, 1), (2, -3), ...

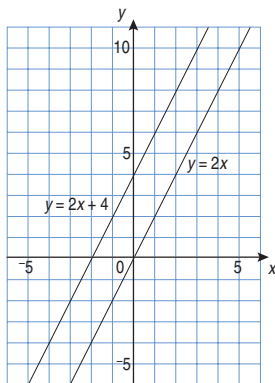
Plot the points. Observe that the points lie in a straight line and draw the line. Read other coordinate pairs from the line (including fractional values) and confirm that they also fit the function.

Recognise that a graph of the form  $y = mx + c$ :

- corresponds to a straight line, whereas the graph of a linear sequence consists of set of discrete points lying on an 'imagined straight line';
- represents an infinite set of points, and that:
  - the values of the coordinates of each point satisfy the equation represented by the graph;
  - any coordinate pair which represents a point not on the graph does not satisfy the equation.

**Plot the graphs of linear functions in the form  $y = mx + c$ , on paper and using ICT,** and consider their features. For example:

- Construct tables of values. Plot and interpret graphs such as:  $y = 2x$ ,  $y = 2x + 1$ ,  $y = 2x + 4$ ,  $y = 2x - 2$ ,  $y = 2x - 5$



Describe similarities and differences.

Notice that:

- the lines are all parallel to  $y = 2x$ ;
- the lines all have the same gradient;
- the number (constant) tells you where the line cuts the y-axis (the intercept).

**As outcomes, Year 9 pupils should, for example:**

Use vocabulary from previous years and extend to: quadratic function, cubic function...

**Plot the graphs of linear functions in the form  $ay + bx + c = 0$ , on paper and using ICT,** and consider their features. For example:

Recognise that linear functions can be rearranged to give  $y$  explicitly in terms of  $x$ . For example:

- Rearrange  $y + 2x - 3 = 0$  in the form  $y = 3 - 2x$ .  
Rearrange  $y/4 - x = 0$  in the form  $y = 4x$ .  
Rearrange  $2y + 3x = 12$  in the form  $y = \frac{12 - 3x}{2}$ .
- Construct tables of values. Plot the graphs on paper and using ICT. Describe similarities and differences.
- Without drawing the graphs, compare and contrast features of graphs such as:  

$y = 3x$	$y = 3x + 4$	$y = x + 4$
$y = x - 2$	$y = 3x - 2$	$y = -3x + 4$